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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/725,862

12/01/2003

Kenji Ichikawa

TOW-055

2792

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EXAMINER

RUTHKOSKY, MARK

ART UNIT

PAPER NUMBER

1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/725,862

Applicant(s)

ICHIKAWA ET AL.

Examiner

Mark Ruthkosky

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/1/2003; 12/11/2006.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements filed 12/1/2003 and 12/11/2006 have been placed in the application file, and the information referred to therein has been considered as to the merits.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the reference sign(s) that are not in English. The drawings include disclosed information in Japanese. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). As the information is disclosed as part of the original disclosure, a certified translation of the language should be included in the amendment to the drawings. Removal of the information may be subject to a new matter rejection as the deletion of the

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disclosure may in itself be new matter. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the resilient member is disclosed to urge a rotational shaft in a direction to open an opening. Later in the claim, the limiting member limits the angular position of the valve body, which is turned by the resilient member. It appears from the disclosure that the rotational shaft is limited by the limiting member. This appears to be different than the valve body.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

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patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano (JP 11-062631.)

The instant claims are to a pressure regulator for fuel cells, which is disposed in a discharge line for discharging an oxidizing agent supplied to a cathode of fuel cells, for controlling a discharged amount of the oxidizing agent to regulate the pressure of the oxidizing agent in the cathode, comprising an opening for passing said oxidizing agent there through, a valve body for opening or closing said opening; a resilient member for urging a rotational shaft to which said valve body is connected, to turn in a direction to open said opening; a limiting member for limiting an angular position of the valve body which is turned by said resilient member, to keep said opening fully open; and a motor energizable for turning said valve body in a direction to close said opening against resilient forces of said resilient member.

Sano (JP 11-062631) teaches a regulator comprising an opening for passing a fluid, a valve body for opening or closing said opening; a resilient member for urging a rotational shaft to which said valve body is connected, to turn in a direction to open said opening; a limiting member for limiting an angular position of the valve body; and a motor energizable for turning said valve body in a direction to close said opening against resilient forces of said resilient member (see figures 1-4 and paragraphs 19-21, 25 and 32-38.) The motor is a stepping motor, which is a brushless motor (see paragraph 21.)

The intended use of the regulator has been considered, but is not given patentable weight, as it does not define the product of the invention. The combination of the regulator in a fuel cell

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does not further limit the regulator. The intended use of the regulator does not further limit the regulator.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (JP 11-062631) in view of Dell et al. (CA 2,261,243.)

Sano (JP 11-062631) teaches a regulator comprising an opening for passing a fluid, a valve body for opening or closing said opening; a resilient member for urging a rotational shaft to which said valve body is connected, to turn in a direction to open said opening; a limiting member for limiting an angular position of the valve body; and a motor energizable for turning said valve body in a direction to close said opening against resilient forces of said resilient member (see figures 1-4 and paragraphs 19-21, 25 and 32-38.)

The reference does not teach a sealing member is disposed between the bearing and the opening of the regulator. Further, the reference does not teach that the valve body, the rotational shaft and the bearing are made of stainless steel. The reference is silent to the materials that form the regulator.

Dell et al. (CA 2,261,243), however teaches a pressure regulator that is made of stainless steel (claims 1-20, page 2, lines 25-30, page 4, line 3 to page 5, line 20 and page 6, line 24-27.)

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The regulator further includes sealing members that radially form a seal with the pressure regulator so as to seal the regulator (paragraph bridging page 4 and page 5.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the components of the regulator of Sano out of stainless steel as taught in Dell, as stainless steel is well described in the art to maintain a fluid path at high pressures, while providing a material that is corrosive resistant. It would have been obvious to one of ordinary skill in the art to use stainless steel for a pressure regulator as taught in Dell in order to operate at high pressure.

Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a sealing member between the bearing of the regulator and the rotational shaft of the regulator in order to seal the regulator and prevent the leakage of high-pressure fluid from the regulator. Dell is cited for using sealing members to prevent the unwanted loss of fluid in a pressure-regulated system. The skilled artisan would recognize that a seal is useful for preventing the loss of fluid in a sealed system. The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

Mark Ruthkosky
Primary Patent Examiner
Art Unit 1745



12.22.2006